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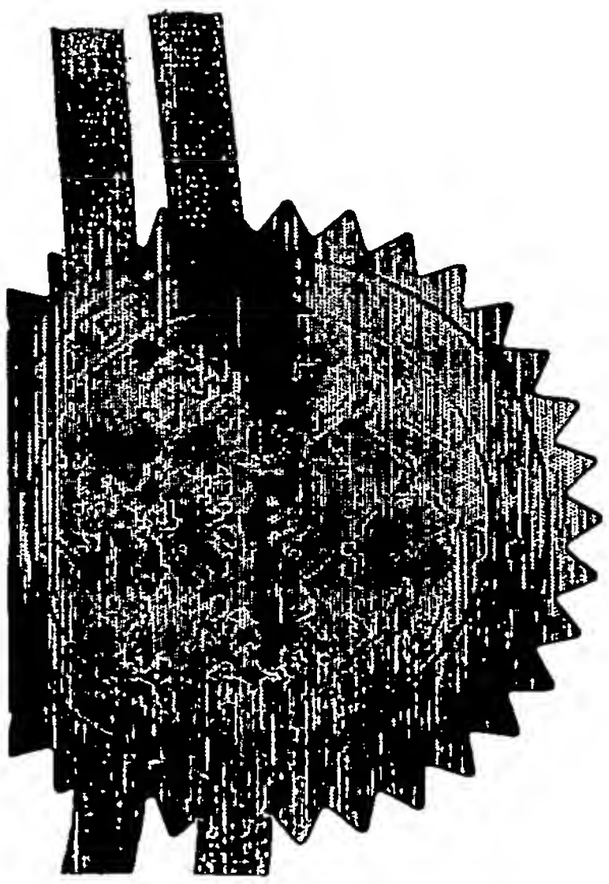

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Dated 4 October 2004

Patents Form 1/77

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14NOV03 E852027-2 D02898
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Request for grant of a patent

See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

Your reference — C4336(C)/rjg

Patent application number *(The Patent Office will fill this part in)* — 0326496.7 — 13 NOV 2003

3. Full name, address and postcode of the or of each applicant *(underline all surnames)*

UNILEVER PLC
UNILEVER HOUSE, BLACKFRIARS
LONDON, EC4P 4BQ

Patents ADP number *(if you know it)* — **50426956002**

If the applicant is a corporate body, give the country/state of its incorporation — **UNITED KINGDOM**

4. Title of the invention — **FABRIC CLEANING DEVICE**

5. Name of your agent *(if you have one)* — **ELLIOTT, Peter William**

"Address for Service" in the United Kingdom to which all correspondence should be sent *(including the postcode)*

PATENT DEPARTMENT, UNILEVER PLC
COLWORTH HOUSE, SHARNBROOK
BEDFORD, MK44 1LQ

Patents ADP number *(if you know it)* — 16285003

6. Priority: Complete this section if you are declaring priority from one or more earlier patent applications, filed in the last 12 months.

Country	Priority application number *(if you know it)*	Date of filing *(day / month / year)*

7. Divisionals, etc: Complete this section only if this application is a divisional application or resulted from an entitlement dispute (see note f)

Number of earlier application	Date of filing *(day / month / year)*

8. Is a Patents Form 7/77 (Statement of inventorship and of right to grant of a patent) required in support of this request?

Answer YES if:
a) any applicant named in part 3 is not an inventor, or
b) there is an inventor who is not named as an applicant, or
c) any named applicant is a corporate body.
Otherwise answer NO (See note d)

YES

Patents Form 1/77

9. Accompanying documents: A patent application must include a description of the invention. Not counting duplicates, please enter the number of pages of each item accompanying this form:

Continuation sheets of this form	
Description	9
Claim(s)	2
Abstract	1
Drawing(s)	4 + 4

10. If you are also filing any of the following, state how many against each item.

Priority Documents	
Translations of priority documents	
Statement of inventorship and right to grant of a patent (Patents Form 7/77)	
Request for preliminary examination and search (Patents Form 9/77)	1
Request for substantive examination (Patents Form 10/77)	
Any other documents (please specify)	

11. I/We request the grant of a patent on the basis of this application.

Signature(s)

Alain Eric Philippe HUGOT, Authorised Signatory

Date: **13/11/03**

12. Name, daytime telephone number and e-mail address, if any, of person to contact in the United Kingdom

Alain HUGOT (01234) 22 2068
alain.hugot@unilever.com

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FABRIC CLEANING DEVICE

The present invention relates general to a fabric cleaning device with a scrubbing member.

Hand-held devices for hand-washing and/or pre-treating fabric prior to a 'main'wash (e.g. in an automatic washing machine)are known. However, there is a need for an effective washing tool which can be filled/refilled with a cleaning fluids comprising a powder and solvent mixture by the user and which can dispense this in an efficient and effective manner whilst also providing for a scrubbing action.

It is an object of the present invention to provide an improved fabric cleaning device.

According to the present invention, there is provided a fabric cleaning device comprising:

(a) A reservoir for storing a fabric cleaning fluid,

(b) a scrubbing member for scrubbing the fabric, the scrubbing member in fluid communication with the reservoir,

(c) the scrubbing member comprising one or more dispensing orifices,

(d) a movable platform for forcing said cleaning fluid to exit from the reservoir to the scubber member, where it is exposed on an exterior portion of the scrubber member via said dispensing orifices, for cleaning purposes.

The term "fluid" herein is intended to include a liquid, gel, and paste e.g. pastes formed from a solid cleaning product e.g. cleaning/detergent powder, granules, flakes, tablets (which may be crushed),pellets together with a solvent, e.g. water.

The movable platform may comprise a wall or base portion of the reservoir, whereby moving e.g. sliding the platform within the reservoir, progressively compresses the cleaning composition which is thereby forced to exit the reservoir and flow to the scrubbing means.

The reservoir is preferably in fluid communication with the scrubbing means by way of an exit orifice or orifices.

The reservoir is preferably refillable with cleaning fluid or components thereof (e.g. detergent powder and water) by the user. To this end, the reservoir preferably has a removable (e.g. by a screw fitting or snap-fit arrangement) portion e.g. end cap and scrubbing means, which can be removed to refill the reservoir with cleaning fluid and then secured. Where the removable portion is upstream of the scrubbing member, the former is preferably provided with one or more exit orifices so that the fluid can reach the latter.

The scrubbing means and end cap may be formed as a one piece unit and may be formed integrally.

The dispensing orifice(s) of the scrubber may be provided by a material having a mesh structure e.g., the apertures of

the mesh providing multiple dispensing orifices. The mesh may be abrasive to provide a scrubbing surface.

In one embodiment the device comprises a generally tubular reservoir having a removable end cap with a exit orifice. The scrubbing member is preferably attached to cover the end cap. The platform is configured for reciprocal axial movement within the reservoir, being slidably advanced toward the end cap by exertion of force by a user, said force compressing the fluid against the end cap to force fluid to exit via the exit orifice to the scrubber member where it is dispensed on the exterior of the scrubbing member via the dispensing orifices for cleaning purposes.

Under release of the force, the platform may be configured to slidably move in a reverse direction to relieve residual stress in the fabric cleaning fluid (for interim storage purposes).

Preferably the platform has a peripheral edge which is configured to slide in a sealing relationship with an inner surface of the reservoir, whereby sliding is guided by said inner surface.

With this arrangement, the device can be used both to store and dispense cleaning fluid with minimal or no leakage via the moving platform.

The user may exert force by means of a feed screw mechanism, so that turning the screw advances the platform a set distance upward. In this way the cleaning composition can be

dispensed in a controlled manner. Preferably, the screw mechanism does not protrude into the reservoir, for sealing purposes.

The device may be shaped e.g. have one or more recesses or indentations for ergonomic purposes, to ease the handling and gripping of the device during use.

In addition, according to a second aspect of the invention there is provided a method of cleaning a fabric using the device according to the first aspect of the invention, the method comprising the steps of:

(a) filling the reservoir with cleaning fluid, optionally optained by mixing a solid cleaning composition e.g. powder, granules, and a solvent e.g. water to form a cleaning fluid within the reservoir,

(b) securing a removable portion e.g. end cap and scrubbing member on the device to close the reservoir

(c) moving the platform e.g by turning a screw-feed mechanism to force the cleaning fluid from the reservoir to be exposed on the exterior of the scrubbing means;

(d) cleaning the fabric by scrubbing with said scubbing means.

The device of the invention may be supplied as a commercial package including (a) a cleaning fluid and/or (b) a cleaning solid for mixing with a solvent to prepare a cleaning fluid.

(c) instructions to direct the user to use the package according to the method of the second aspect of the invention.

Various non-limiting embodiments of the invention will now be more particularly described with reference to the following figures in which:

Figure 1 is a perspective view of one embodiment according to one aspect of the invention;
Figure 2 is a side sectional view of the embodiment shown in figure 1, with the platform in a fully lowered position;
Figure 3 is a side sectional view of the embodiment shown in figure 1, with the platform in a fully raised position; and
Figure 4 is a enlarged and exploded perspective view of the screw feed mechanism of figure 1.

Referring to figures 1-3, there is illustrated a fabric cleaning device 1 comprising:

(a) A generally tubular reservoir 3 for storing the fabric cleaning fluid 9
(b) a scrubbing member 5 for scrubbing a fabric, the scrubbing member 5 in fluid communication with the reservoir 3 ,
(c) the scrubbing member 5 comprising one or more dispensing orifices 7 ,
(d) a movable platform 11 for forcing said cleaning fluid 9 to exit from the reservoir 3 and flow to the scubber member 5 , where it is exposed on an exterior portion

5a of the scrubber member 5 via said dispensing orifices 7, for cleaning purposes.

The term "fluid" herein is intended to include a liquid, gel, and paste e.g. pastes formed from a solid cleaning product e.g. powder or granules and a solvent, e.g. water.

The movable platform 11 forms the base portion of the reservoir 3, whereby sliding the platform 11 within the reservoir 3, progressively compresses the cleaning fluid 9 which is thereby forced to exit the reservoir 3 and flow to the scrubbing means 5.

The reservoir 3 is in fluid communication with the scrubbing means 5 by way of a centrally located exit orifice 13.

The reservoir 3 is refillable with cleaning fluid 9 or components thereof (e.g. detergent powder and water) by the user. To this end, the reservoir has a removable (by a tight, water-tight screw-fitting not shown) end cap 15 which is formed as a single unit with the scrubbing means 5. The scubbing means is secured to the latter by ultrasonical welding to the end cap 15 which is possible if both are made from compatible material, here HDPE(high density polyethylene). The end cap 15/ scrubbing means 5 can be removed to refill the reservoir with cleaning fluid 3 and then re-secured. As the removable end cap 15 actually forms the roof of the reservoir and is upstream of the scrubbing member 5 , the exit orifice 13 from the reservoir is located in the end cap 15.

The scrubber 5 comprises a HDPE (high density polyethylene) material having a coarse, hard mesh structure (such as greenhouse shadecloth fabric). The apertures 7 of the mesh providing multiple dispensing orifices 7. This mesh is sufficiently abrasive to provide a scrubbing surface, however the surface can be altered depending on the material chosen. Eg. a rigid corrugated surface with dispensing apertures could be used.

The platform 11 is configured for reciprocal axial movement within the reservoir 3 , being slidably advanced toward the end cap 15 /scrubber 5 by exertion of force by a user, said force compressing the fluid 9 against the end cap 15 to force fluid to exit via the exit orifice 13 to the scrubber member 5 where it is dispensed on the exterior 5a of the scrubbing member 5 via the dispensing orifices 7 for cleaning purposes.

The user exerts force by means of a worm drive feed screw mechanism 19 (shown more clearly in figure 4) which is afixed to the underside 11b of the platform 11, and a screw actuator 21 so that turning the screw actuator 21 (which is accessible externally of the device) in one direction advances the platform 11 a set distance upward. In this way the cleaning fluid 9 can be dispensed in a controlled manner. The screw mechanism does not protrude into the reservoir, for sealing purposes.

Under release of the force, ie. By unscrewing the mechanism 19 the platform 11 can slidably move in a reverse direction to relieve residual stress in the fabric cleaning fluid 9.

The platform has a peripheral edge 11a which is configured to slide in a sealing relationship with the inner surface 17 of the reservoir 3 , whereby sliding is guided by said inner surface 17. With this arrangement, the device can be used both to store and dispense cleaning fluid with minimal or no leakage via the moving platform.

The device is shaped with an annular band of recesses and protrusions 23 for ergonomic purposes, to ease the handling and gripping of the device during use.

In use the reservoir is filled with cleaning fluid, optionally optained by mixing a solid cleaning composition e.g. powder, granules, and a solvent e.g. water to form a cleaning fluid or paste within the reservoir. The end cap 15 and scrubbing means 5 are then screwed on tightly to the device to close the reservoir. The platform 11 is advanced from a lowered state (fig2) towards a raised state (fig 3)by turning a screw-feed mechanism 19 to force the cleaning fluid 9 from the reservoir 3 to be exposed on the exterior 5a of the scrubbing means 5. The user can then cleaning the fabric by scrubbing with said scubbing means 5. The use of hardwearing HDPE material reduces tearing of the scrubber 5during use.

A further embodiment of the device of the invention includes a cleaning fluid and/or a cleaning solid for mixing with a solvent e.g. water, to prepare a cleaning fluid.
Instructions to direct the user to use the package according to the method as above, are also included.

It is of course to be understood that the invention is not intended to be restricted to the details of the above embodiments which are described by way of example only.

CLAIMS

1. A device for cleaning a substrate such as a fabric comprising:

(a) A reservoir for storing a fabric cleaning fluid,

(b) a scrubbing member for scrubbing the fabric, the scrubbing member in fluid communication with the reservoir,

(c) the scrubbing member comprising one or more dispensing orifices,

(d) a movable platform for forcing said cleaning fluid to exit from the reservoir to the scubber member, where it is exposed on an exterior portion of the scrubber member via said dispensing orifices, for cleaning purposes.

2. A device according to claim 1 wherein the platform comprises a wall or base portion of the reservoir and sliding the platform within the reservoir, progressively compresses the cleaning composition which is thereby forced to exit the reservoir and flow to the scrubbing means.

3. A device according to any preceding claim in which the reservoir is in fluid communication with the scrubbing means by way of an exit orifice or orifices.

4. A device according to any preceding claim in which the reservoir is refillable with cleaning fluid or components thereof, by a user.

5. A device according to any preceding claim in which the reservoir has a removable portion e.g. end cap and optionally scrubbing means for refilling purposes.

6. A device according to any preceding claim in which the dispensing orifices are provided by a mesh fabric.

7. A device according to any preceding claim in which the platform is configured for reciprocal generally axial movement within a generally tubular reservoir.

8. A device according to any preceding claim in which the platform is movable by means of screw feed mechanism.

9. A device according to any preceding claim in which the platform has a peripheral edge configured to slide in a sealing relationship with an inner surface of the reservoir, whereby sliding is guided by said inner surface.

10. A method of cleaning a fabric using the device according to any preceding claim, the method comprising the steps of:

(a) filling the reservoir with a cleaning fluid, optionally optained by mixing a solid cleaning composition e.g. powder, granules, and a solvent e.g. water to form a cleaning fluid within the reservoir,

(b) securing a removable portion e.g. end cap and scrubbing member on the device to close the reservoir,

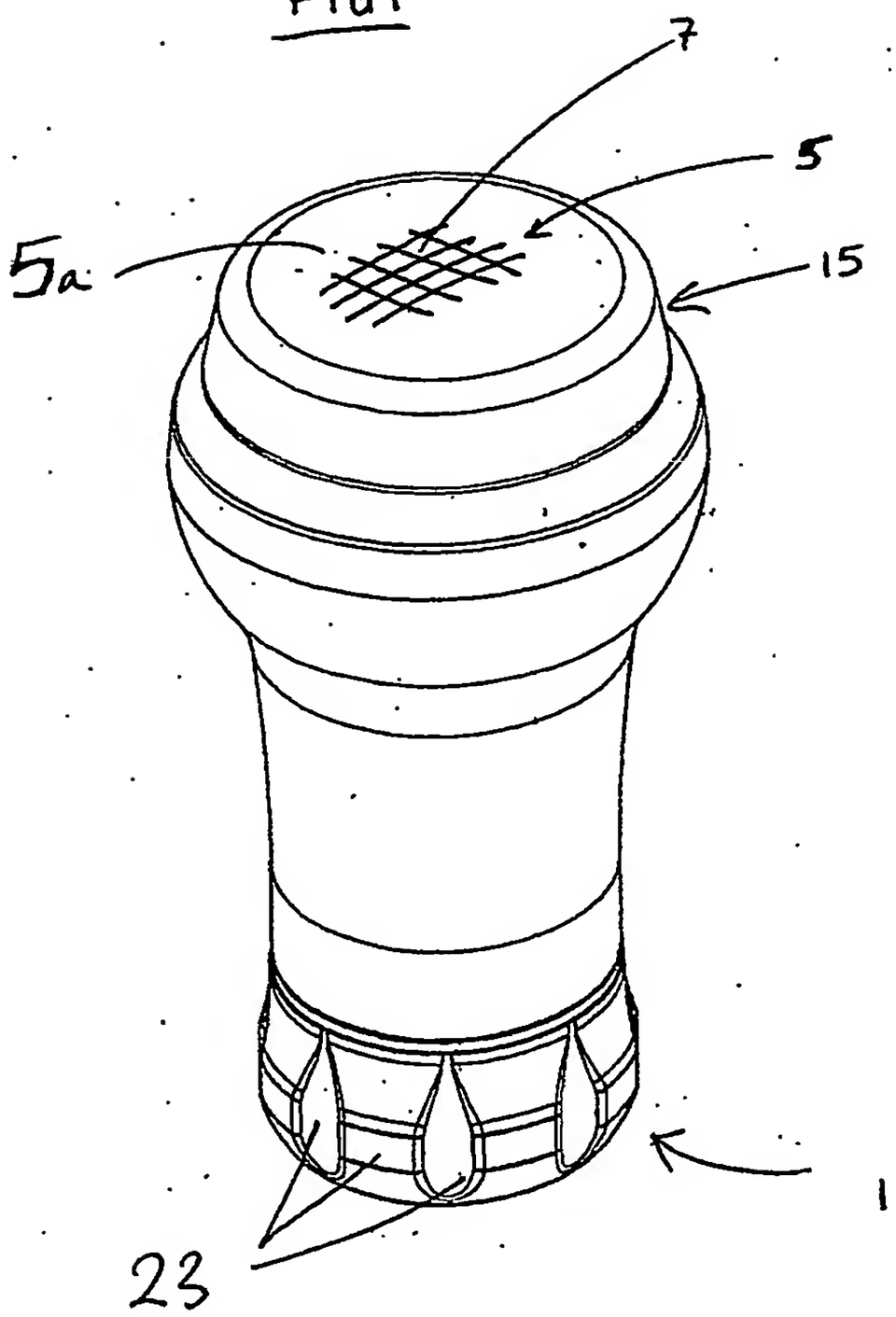
(c) moving the platform e.g by turning a screw-feed mechanism to force cleaning fluid from the reservoir to be exposed on the exterior of the scrubbing means; and

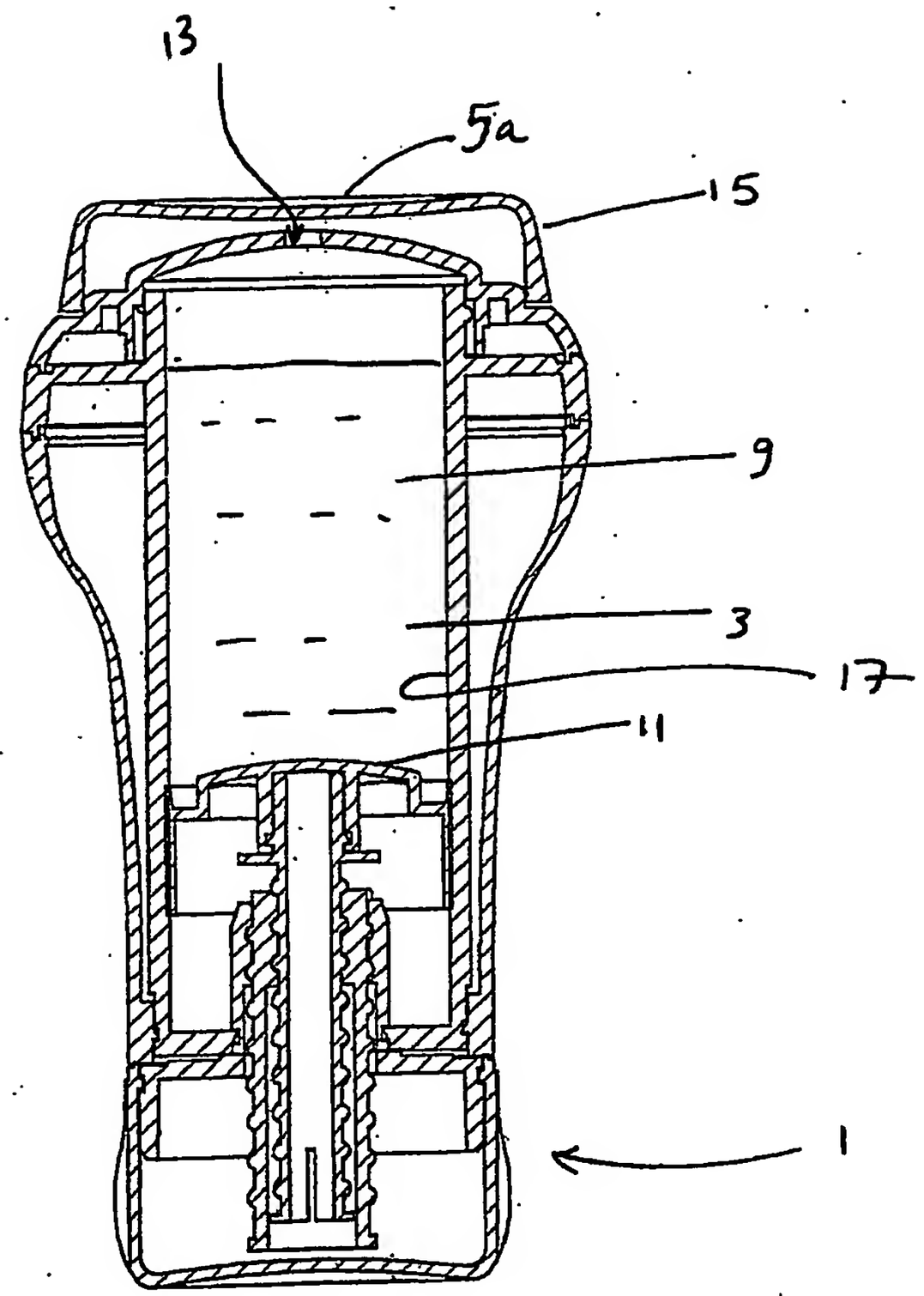
(d) cleaning the fabric by scrubbing with said scubbing means.

ABSTRACT

A device for cleaning a substrate such as a fabric comprises a reservoir for storing a fabric cleaning fluid, a scrubbing member for scrubbing the fabric, the scrubbing member in fluid communication with the reservoir. The scrubbing member comprises one or more dispensing orifices and a movable platform for forcing said cleaning fluid to exit from the reservoir to the scubber member, where it is exposed on an exterior portion of the scrubber member via said dispensing orifices, for cleaning purposes.

FIG1

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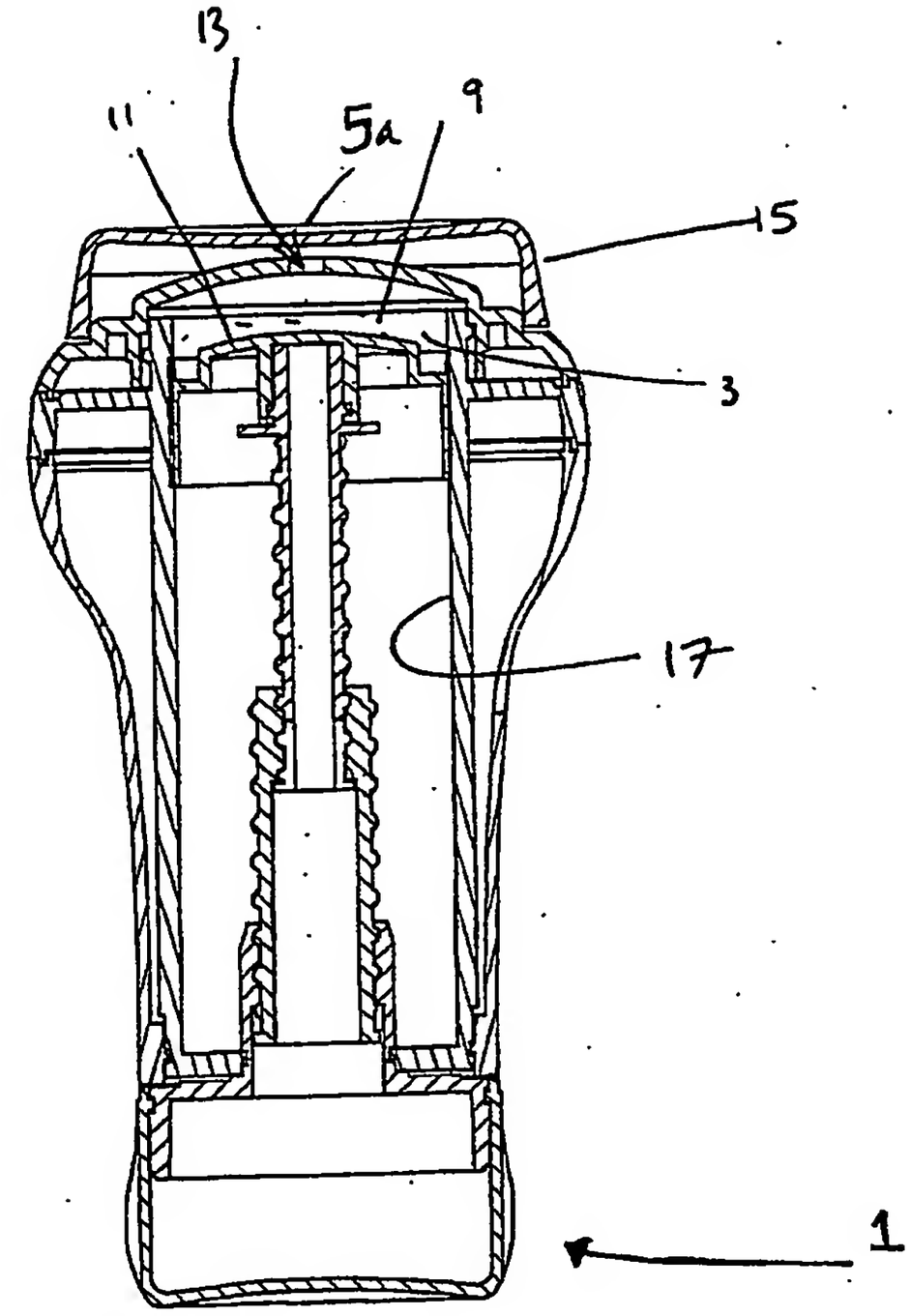
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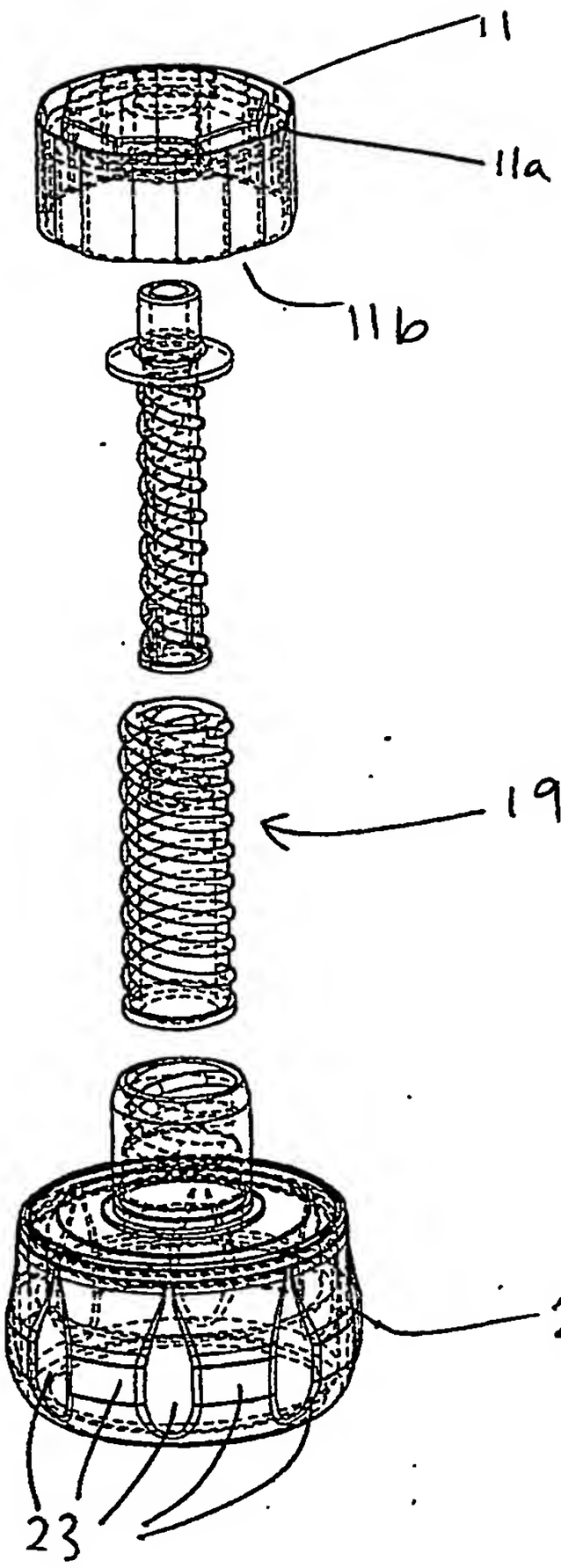
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